User Guide

DTP Systems

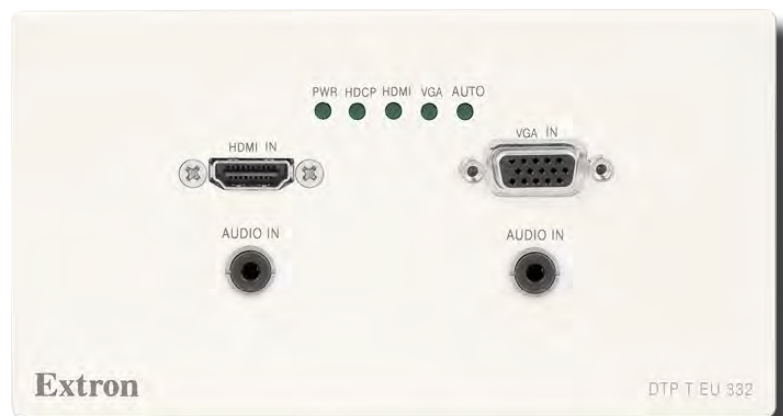# DTP T EU 332
DTP T EU 232
DTP T MK 332
DTP T MK 232

Two-input Universal Twisted Pair Transmitters for EU- and MK-type Junction Boxes

Extron Electronics

INTERFACING, SWITCHING AND CONTROL

Safety Instructions

Safety Instructions • English

WARNING: This symbol, ⚡, when used on the product, is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

ATTENTION: This symbol, ⚠, when used on the product, is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

For information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the Extron Safety and Regulatory Compliance Guide, part number 68-290-01, on the Extron website, **www.extron.com.**

Instructions de sécurité • Français

AVERTISSEMENT: Ce pictogramme, ⚡, lorsqu'il est utilisé sur le produit, signale à l'utilisateur la présence à l'intérieur du boîtier du produit d'une tension électrique dangereuse susceptible de provoquer un choc électrique.

ATTENTION: Ce pictogramme, ⚠, lorsqu'il est utilisé sur le produit, signale à l'utilisateur des instructions d'utilisation ou de maintenance importantes qui se trouvent dans la documentation fournie avec le matériel.

Pour en savoir plus sur les règles de sécurité, la conformité à la réglementation, la compatibilité EMI/EMF, l'accessibilité, et autres sujets connexes, lisez les informations de sécurité et de conformité Extron, réf. 68-290-01, sur le site Extron, **www.extron.com**.

Sicherheitsanweisungen • Deutsch

WARNUNG: Dieses Symbol ⚡ auf dem Produkt soll den Benutzer darauf aufmerksam machen, dass im Inneren des Gehäuses dieses Produktes gefährliche Spannungen herrschen, die nicht isoliert sind und die einen elektrischen Schlag verursachen können.

VORSICHT: Dieses Symbol ⚠ auf dem Produkt soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Weitere Informationen über die Sicherheitsrichtlinien, Produkthandhabung, EMI/EMF-Kompatibilität, Zugänglichkeit und verwandte Themen finden Sie in den Extron-Richtlinien für Sicherheit und Handhabung (Artikelnummer 68-290-01) auf der Extron-Website, **www.extron.com**.

Instrucciones de seguridad • Español

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ATENCIÓN: Este símbolo, ⚠, cuando se utiliza en el producto, avisa al usuario de la presencia de importantes instrucciones de uso y mantenimiento recogidas en la documentación proporcionada con el equipo.

Para obtener información sobre directrices de seguridad, cumplimiento de normativas, compatibilidad electromagnética, accesibilidad y temas relacionados, consulte la Guía de cumplimiento de normativas y seguridad de Extron, referencia 68-290-01, en el sitio Web de Extron, **www.extron.com**.

Инструкция по технике безопасности • Русский

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Для получения информации о правилах техники безопасности, соблюдении нормативных требований, электромагнитной совместимости (ЭМП/ЭДС), возможности доступа и других вопросах см. руководство по безопасности и соблюдению нормативных требований Extron на сайте Extron: **www.extron.com**, номер по каталогу - 68-290-01.

Chinese Simplified（简体中文）

警告：⚡产品上的这个标志意在警告用户该产品机壳内有暴露的危险 电压，有触电危险。

注意：⚠ 产品上的这个标志意在提示用户设备随附的用户手册中有重要的操作和维护(维修) 说明。

关于我们产品的安全指南、遵循的规范、EMI/EMF 的兼容性、无障碍使用的特性等相关内容，敬请访问 Extron 网站 **www.extron.com**，参见 Extron 安全规范指南，产品编号 68-290-01。

Chinese Traditional（繁體中文）

警告：⚡若產品上使用此符號，是為了提醒使用者，產品機殼內存在著可能會導致觸電之風險的未絕緣危險危險電壓。

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有關安全性指導方針、法規遵守、EMI/EMF 相容性、存取範圍和相關主題的詳細資訊，請瀏覽 Extron 網站：**www.extron.com**，然後參閱《Extron 安全性與法規遵守手冊》，準則編號 68-290-01。

Japanese

警告: この記号 ⚡ が製品上に表示されている場合は、筐体内に絶縁されていない高電圧が流れ、感電の危険があることを示しています。

注意: この記号 ⚠ が製品上に表示されている場合は、本機の取扱説明書に記載されている重要な操作と保守(整備)の指示についてユーザーの注意を喚起するものです。

安全上のご注意、法規厳守、EMI/EMF適合性、その他の関連項目については、エクストロンのウェブサイト **www.extron.com** より『Extron Safety and Regulatory Compliance Guide』(P/N 68-290-01) をご覧ください。

Korean

경고: 이 기호 ⚡, 가 제품에 사용될 경우, 제품의 인클로저 내에 있는 접지되지 않은 위험한 전류로 인해 사용자가 감전될 위험이 있음을 경고합니다.

주의: 이 기호 ⚠, 가 제품에 사용될 경우, 장비와 함께 제공된 책자에 나와 있는 주요 운영 및 유지보수(정비) 지침을 경고합니다.

안전 가이드라인, 규제 준수, EMI/EMF 호환성, 접근성, 그리고 관련 항목에 대한 자세한 내용은 Extron 웹 사이트(**www.extron.com**)의 Extron 안전 및 규제 준수 안내서, 68-290-01 조항을 참조하십시오.

FCC Class A Notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. The Class A limits provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference. This interference must be corrected at the expense of the user.

> **ATTENTION:** The Twisted Pair Extension technology works with shielded twisted pair (STP) cables **only**. To ensure FCC Class A and CE compliance, STP cables and STP Connectors are also required.
>
> For more information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the "**Extron Safety and Regulatory Compliance Guide**" on the Extron website.

Conventions Used in this Guide

Notifications

The following notifications are used in this guide:

> **ATTENTION:**
> - Risk of property damage.
> - Risque de dommages matériels.

> **NOTE:** A note draws attention to important information.

> **TIP:** A tip provides a suggestion to make working with the application easier.

Software Commands

Commands are written in the fonts shown here:

`^AR Merge Scene,,Op1 scene 1,1 ^B 51 ^W^C`

`[Ø1] R ØØØ4 ØØ3ØØ ØØ4ØØ ØØ8ØØ ØØ6ØØ [Ø2] 35 [17] [Ø3]`

`Esc X1 * X17 * X20 * X24 * X22 CE ←`

> **NOTE:** For commands and examples of computer or device responses mentioned in this guide, the character "Ø" is used for the number zero and "O" is the capital letter "o."

Selectable items, such as menu names, menu options, buttons, tabs, and field names are written in the font shown here:

From the **File** menu, select **New**.

Click the **OK** button.

Specifications Availability

Product specifications are available on the Extron website, **www.extron.com**.

Contents

Introduction

- **About this Guide**
- **About the Switching Transmitters**
- **Features**

About this Guide

This guide describes the following wallplate-mounted switching transmitter models:

- **DTP T EU 332**
- **DTP T EU 232**
- **DTP T MK 332**
- **DTP T MK 232**

> **NOTE:** In this guide:
> - The units are commonly referred to as "switchers" or as "switching transmitters."
> - Unless specifically identified by the model name, the discussions in the guide apply to any model.

The switchers output a signal to a compatible DTP receiver. This guide describes how to install, operate, and configure the switcher.

About the Switching Transmitters

The switching transmitters covered in this guide are 2-input VGA and HDMI switchers with DTP transmitter outputs (see **figure 1**, on the next page). The switchers are HDCP compliant, and support 1080p/60 Deep Color and 1920x1200 signals.

Each switcher selects between one analog VGA and one HDMI input, including embedded audio (or DVI video with the appropriate adapter). The switcher converts the selected input, an optional analog audio input, and bidirectional RS-232 and infrared (IR) control signals to a proprietary digital signal. The switcher and a compatible DTP receiver extend the usable distance of video, audio, and control signals over a single Extron XTP DTP 24 shielded twisted pair (STP) cable (recommended) or other STP cable.

The DTP T EU 332 and DTP T MK 332 are compatible with a DTP HDMI 330 Rx or DTP DVI 330 Rx receiver, with a range of up 330 feet (100 M).

The DTP T EU 232 and DTP T MK 232 are compatible with a DTP HDMI 230 Rx or DTP DVI 230 Rx receiver, with a range of up 230 feet (70 M).

The switchers fit into EU or MK two-gang junction boxes or European cable channel systems, depending on the transmitter model.

The included external 12 VDC power supply accepts 100 to 240 VAC, 50-60 Hz. A single power supply connected to either the transmitter or the compatible receiver can power both units through the STP cable.
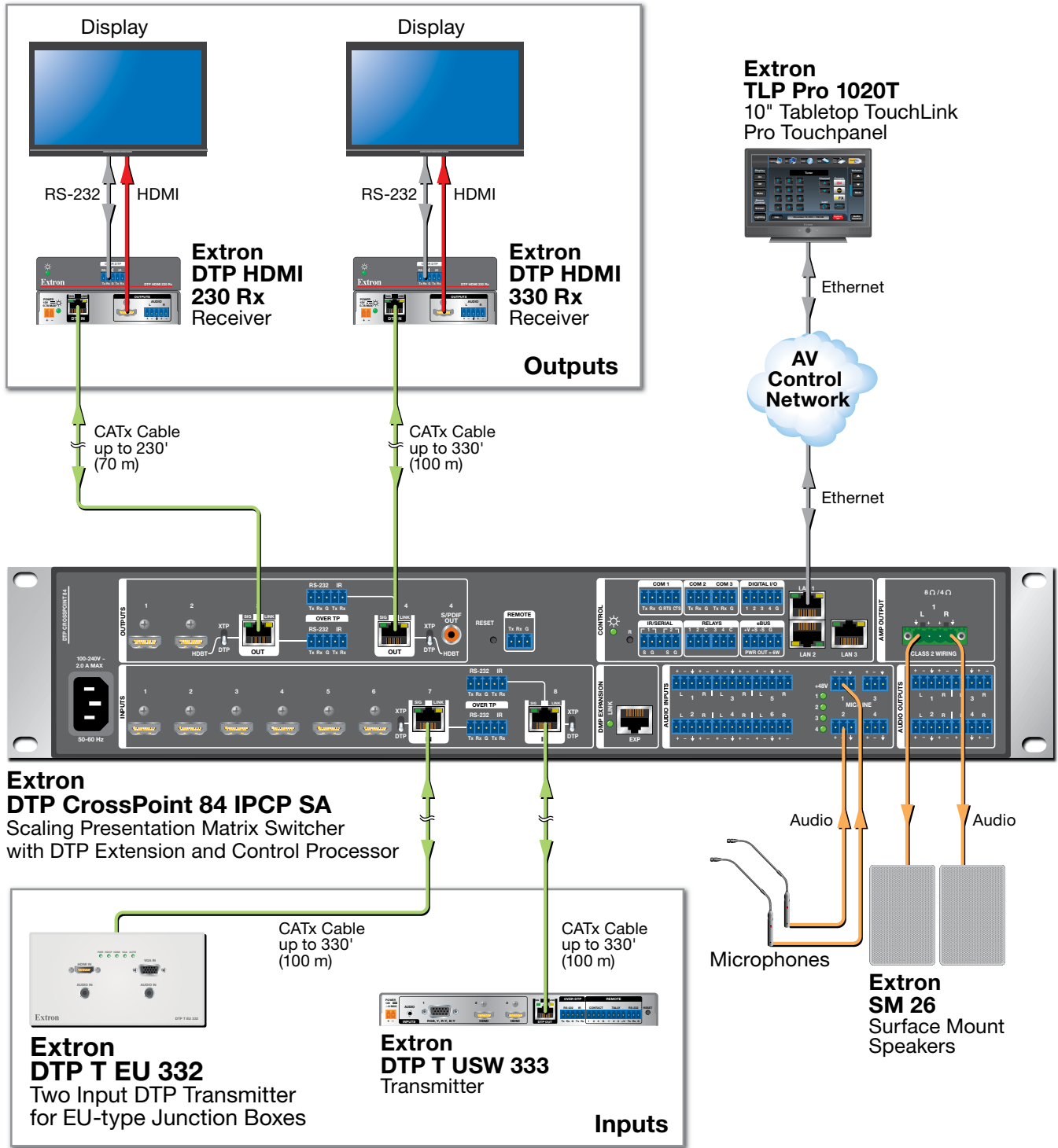
Figure 1.   **Typical Transmitter and Receiver Application**

Features

Transmits HDMI or analog video, control, and analog audio up to 330 feet (100 meters) (DTP T EU 332 or DTP T MK 332) or 230 feet (70 meters) (DTP T EU 232 or DTP T MK 232) over a single STP cable — The units provides high reliability and maximum performance on an economical and easily installed cable infrastructure.

Supports computer video to 1920x1200, including HDTV 1080p/60 Deep Color and 2K

Accepts additional analog stereo audio signals — The DTP transmitters support a direct pass through connection for stereo analog audio signals for simultaneous transmission over the same single twisted pair cable. Analog audio is not embedded onto the digital video signal. A DTP 330 or DTP 230 receiver can output balanced and unbalanced audio, allowing streamlined integration within an AV system.

The DTP output is compatible with HDBaseT-enabled devices — The DTP output can be configured to send video and embedded audio, plus bidirectional RS-232 and IR signals to HDBaseT-enabled displays.

Bidirectional RS-232 and IR insertion for AV device control — Control and IR signals can be transmitted alongside the video signal over DTP connections, allowing the remote device to be controlled without the need for additional cabling. Bidirectional control insertion eliminates the need for control system wiring to remote devices.

Remote powering of transmitter or receiver — For simplified installation, only one power supply is necessary to power both devices.

Digital conversion of analog input signals — Analog signals are digitized, ensuring that a reliable, high quality digital video signal is sent to the output destination.

EDID Minder — Automatically manages EDID communication between connected devices, ensuring that all sources power up properly and reliably output content for display.

Compatible with all DTP HDMI 330 (230) and DTP DVI 330 (230) receivers, and DTP 330- (230-)enabled products — The switching transmitters can be used with the Extron IN1608, DTP CrossPoint 84, and other DTP 330- (230-)enabled products to meet application requirements.

Installation and Operation

This section contains information for mounting, connecting, wiring, and operating the DTP T EU 332, DTP T MK 332, DTP T EU 232, and DTP T MK 232 . Topics in this section include:

- **Installation Overview**
- **Installing the Junction Box or European Cable Channel System**
- **Rear Panel and Side Panel Features**
- **Mounting the Switching Transmitters**
- **Front Panel Connectors**
- **Connection and Wiring Details**
- **Operation**
- **Troubleshooting — If no Image Appears**

Installation Overview

All models can mount into junction boxes. The DTP T EU 332 and DTP T EU 232 can mount into a European cable channel system (also known as a "trunking system").

For junction boxes, the DTP T EU 332 and DTP T EU 232 mount into European junction boxes and the DTP T MK 332 and DTP T MK 232 mount into MK junction boxes.

To mount and connect the transmitters, consider the following:

☐ Ensure there is enough space between the rear panel and the back of the junction box or European cable channel system to fit connectors. The switchers require a minimum depth of 36 mm (1.4 inch).

> **NOTE:** The depth of the junction box or European cable channel system may vary.

☐ If you are using a European cable channel system with a DTP T EU 332 or DTP T EU 232, ensure the transmitter fits in the desired channel. **Figure 2**, on the next page, shows the dimensions of both EU transmitter models. The depth of all four transmitters is the same.

☐ If necessary, prepare the mounting surface.

> **CAUTION:** Failure to check the items listed below may result in personal injury or property damage.
>
> **ATTENTION :** La non-vérification des éléments listés ci-dessous peut provoquer des blessures ou dommages matériels.

☐ Ensure there are no utility cables or pipes at the intended location that might be damaged or cause injury when installing the device.

☐ Check that the installation meets the building, electrical, and safety codes.
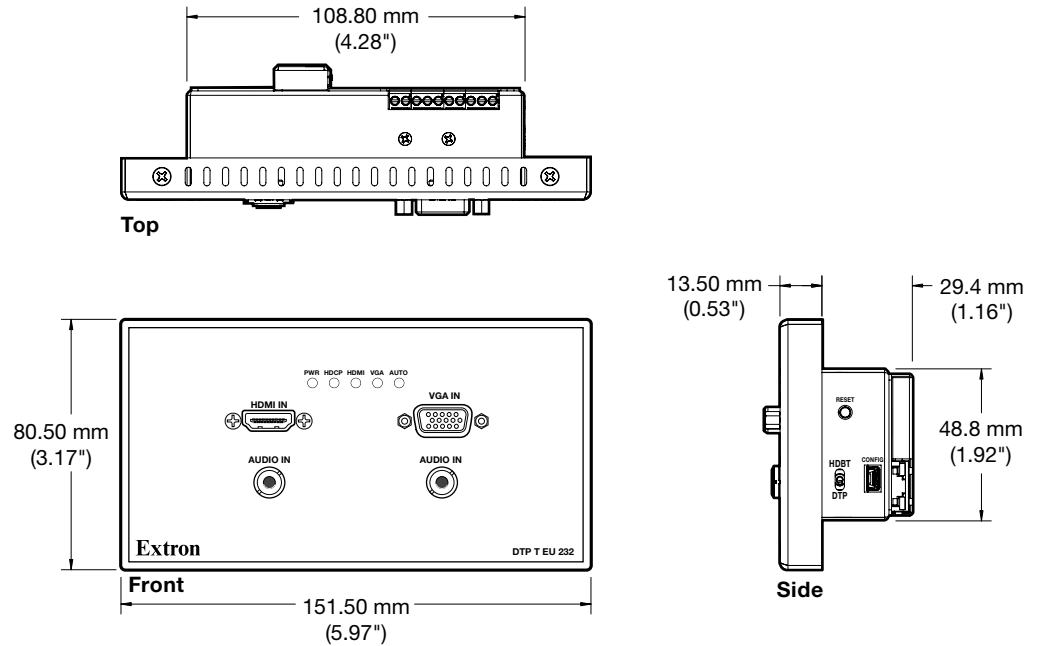
Figure 2. DTP T EU 332 and DTP T EU 232 Dimensions

☐ Choose a location that allows cable runs without interference.

> **NOTE:** Cables may need to be installed in the wall or conduits before installation.

☐ Install the junction box or European cable channel system (see **Installing the Junction Box or European Cable Channel System** on page 6).

> **NOTE:** Refer to the manufacturer for more junction box installation requirements.

☐ Route and connect cables to the rear panel connectors (see **Rear Panel and Side Panel Features** on page 7).

☐ Mount the unit into the junction box (see **Mounting the Switching Transmitters** on page 9).

☐ Connect inputs to the front panel connectors (see **Front Panel Connectors** on page 10).

Installing the Junction Box or European Cable Channel System

Refer to the junction box or European cable channel system manufacturer for additional installation considerations. If required to cut an opening in the mounting surface, consider the following:

- For accuracy, use a template or the mounting enclosure to mark cut guidelines.

- To avoid making the hole too big, cut inside the marked guidelines.

> **CAUTION:** Smooth the edges of the opening to avoid personal injury during installation and damage to the mounting device or the cables.
>
> **ATTENTION :** Limez les bords de l'ouverture afin d'éviter toute blessure lors de l'installation et d'endommager l'appareil de montage ou les câbles.

- Secure cables with clamps or ties to provide strain relief.

- Trim back and insulate shields with heat shrink.

> **ATTENTION:**
>
> - To prevent short circuits, the outer foil shield can be cut back to the point where the cable exits the cable clamp. Both braided and foil shields should be connected to an equipment ground at the other end of the cable.
>
> - Afin d'éviter les court circuits, le blindage en aluminium extérieur peut être réduit jusqu'à ce que le câble sorte de la cosse de câble. Le blindage tressé et le blindage en aluminium devraient être connectés à la masse d'un équipement à l'autre bout du câble.

Rear Panel and Side Panel Features

Top

Side   Rear
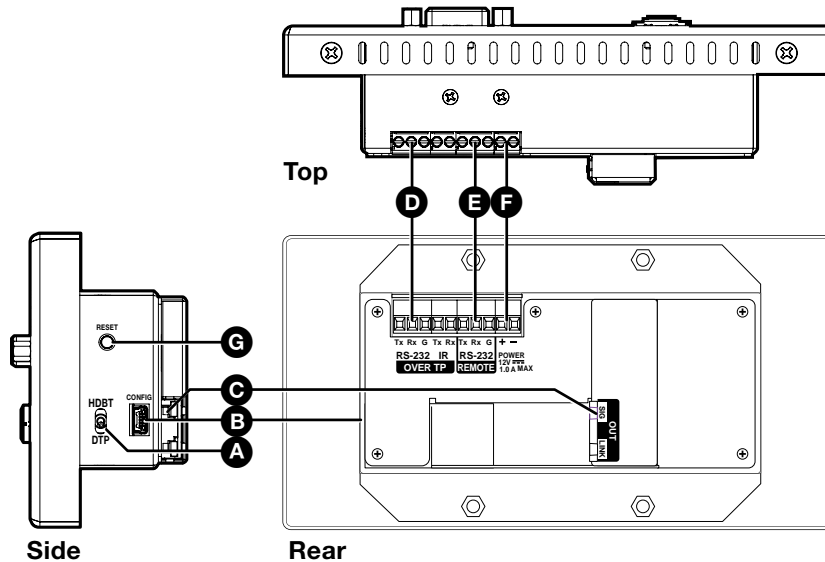
Figure 3.   Rear Panel and Side Panel Features

A **TP function switch** (see below)   **E** **Remote RS-232 port** (see **page 8**)

B **Configuration port** (see below)   **F** **Power connector** (see **page 8**)

C **TP connector** (see **page 8**)   **G** **Reset button** (see **page 8**)

D **Over TP RS-232 and IR port port** (see **page 8**)

A **TP function switch** — If the receiving device is in the Extron DTP series, set this switch to the DTP position. For an HDBaseT-enabled receiver type, set this switch to the HDBT position. This switch tailors the output signal as follows:

> **ATTENTION**:
> - Position this switch **BEFORE** connecting the appropriate device to the TP connector. Failure to comply can damage the endpoint.
> - Positionnez le sélecteur **AVANT** de connecter l'appareil approprié au connecteur TP. Ne pas respecter cette procédure pourrait endommager le point de connexion.

HDBT position — The TP output consists of HDMI with embedded audio plus RS-232 and IR.

DTP position — TP output consists of HDMI with embedded audio, analog audio, RS-232 and IR, and remote power.

> **NOTES:**
> - **When the switch is in the HDBT position**, the transmitter and receiver each requires a local 12 VDC power supply.
> - **When the switch is in the DTP position**, one 12 VDC power supply, connected to either the transmitter or the receiver, can power both units.

B **Config port** — Connect a host device to the USB mini B configuration port.

> **NOTE:**   A Configuration port connection and a Remote RS-232 port connection can both be active at the same time. If commands are sent simultaneously to both, the command that reaches the processor first is handled first.

C **TP connector** — Plug one end of a STP cable to this RJ-45 female jack on the switching transmitter. Plug the opposite end of this cable into the DTP Input RJ-45 connector on a compatible receiver (see **TP Cable Termination and Recommendations** on page 13 to properly wire the RJ-45 connector and for detailed **NOTES**).
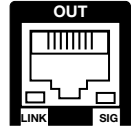
Signal LED indicator — Lights green when the transmitter outputs a video signal or a test pattern.

Link LED indicator — Lights yellow when a device is connected and communication is established.

> **ATTENTION:**
> - Do not connect this connector to a computer data or telecommunications network.
> - Ne connectez pas ces port à des données informatiques ou à un réseau de télécommunications.

D **Over TP RS-232 and IR port** — Plug a serial RS-232 signal, a modulated IR signal (up to 40 kHz), or both into this 3.5 mm, 5-pole direct insertion connector for bidirectional RS-232 and IR communication (see **IR and RS-232 Connector Wiring** on page 14 to wire the connector). RS-232 and IR data can be transmitted simultaneously.
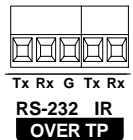
E **Remote RS-232 port** — Plug a host device into the switching transmitter via the 3.5 mm, 3-pole direct insertion connector for remote control of the transmitter (see **IR and RS-232 Connector Wiring** on page 14 to wire the connector).
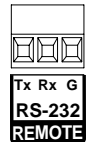
- 9600 Baud
- No parity
- 8 data bits
- 1 stop bit

F **Power connector** — Plug the included external 12 VDC power supply into either this 2-pole direct insertion connector (see **Power Supply Wiring** on page 15 to wire the connector). **Or**, power the receiver (see the *DTP HDMI 330 User Guide* or *DTP HDMI 230 User Guide*, available at **www.extron.com**) and leave the TP function switch in DTP position.
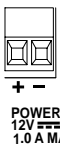
> **NOTE:** When the TP function switch (**item A** on page 7) **is in the DTP position**, one power supply can power both units.
>
> When the TP function switch is in the HDBT position, the transmitter and receiver each requires a local 12 VDC power supply.

G **Reset button** — The Reset button initiates a reset of the switcher (see **Reset** on page 17 for details).

Mounting the Switching Transmitters

1. Mount the mounting plate depending on the junction box model or European cable channel system with the flanged edges pointing away from the junction box.

    *   For EU junction boxes, use four long screws to attach the mounting plate to the junction box (see figure 4).

Wall Box
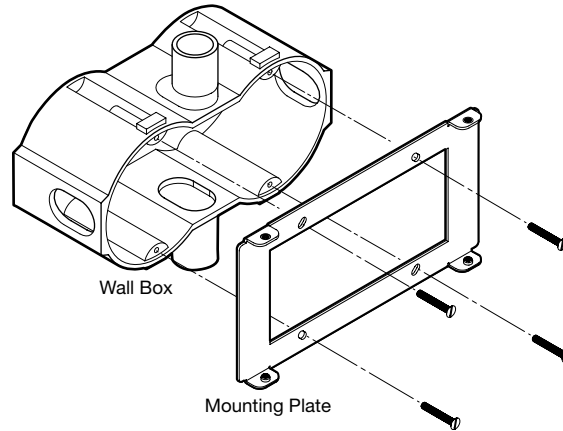
Mounting Plate

Figure 4.   Mounting Plate Installation for the DTP T EU Units

    *   For MK junction boxes, use two long screws to attach the mounting plate to the junction box (see figure 5).

Wall Box
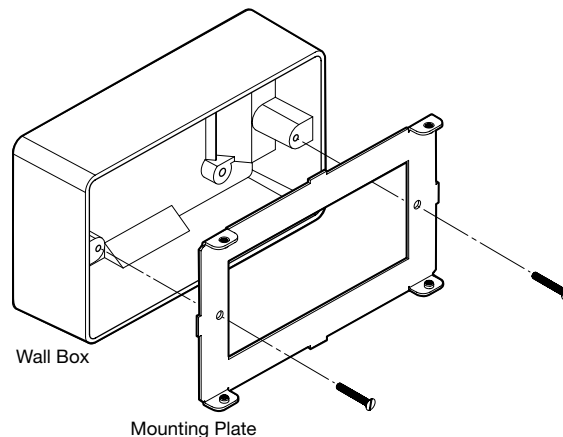
Mounting Plate

Figure 5.   Mounting Plate Installation for the DTP T MK Units

    *   To install the adapter plate to a European cable channel system, refer to the manufacturer of the European cable channel system for any additional equipment or installation requirements.

2. Using the four short screws, attach the transmitter to the flanged edges of the mounting plate (see figure 6).
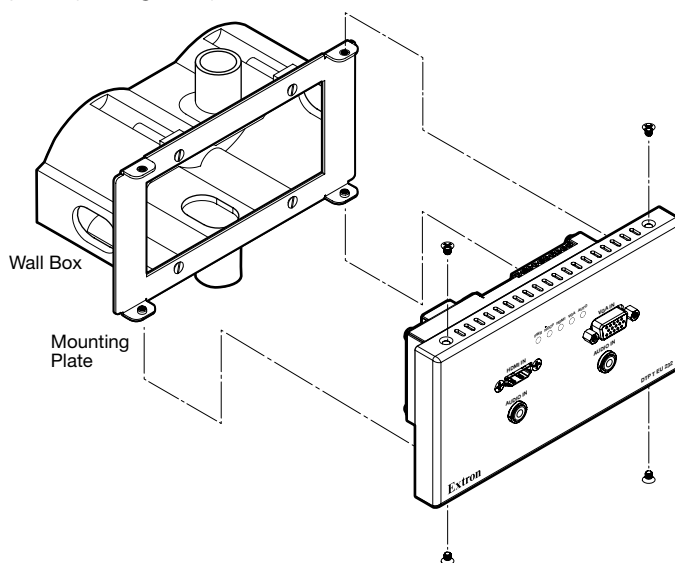
Figure 6. **Transmitter Installation (EU Unit Shown)**

Front Panel Connectors
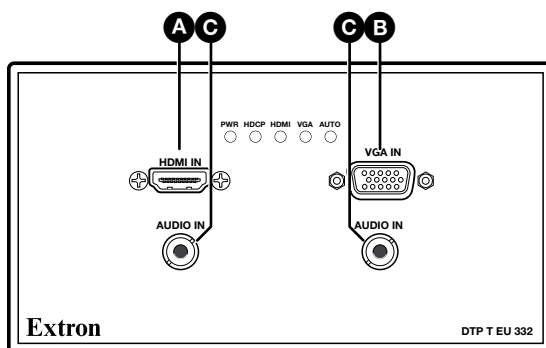
Figure 7. **Front Panel Connectors (DTP T EU 322 Shown)**

Ⓐ **HDMI input port** (see below)   Ⓒ **Audio In connectors** (see **page 11**)

Ⓑ **Analog video input port** (see below)

> **NOTE:** All transmitter models in this guide have a similar front panel appearance.

Ⓐ **HDMI input port** — Connect a digital video source into the switching transmitter via this HDMI connector. It can accept HDMI, DVI (with an appropriate adapter), or dual mode DisplayPort video sources.

> **NOTES:**
> - The maximum HDMI cable length is 4.5 m (15 feet).
> - Use an Extron LockIt lacing bracket to secure the HDMI connector to the device (see **HDMI Connection** on page 12).

Ⓑ **Analog video input port** — Connect an analog video source (RGB and component) video source into the switching transmitter via this 15-pin HD connector. See **VGA connector Wiring** on page 13 to for connector pinout.
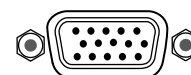
C **Audio In connectors —** If desired, plug analog audio sources into the switching transmitter via these 3.5 mm tip-ring-sleeve (TRS) jacks.

NOTES:

- The analog audio input on this connector is **not** embedded onto the digital signal and is in addition to the digital audio that may be already embedded in the HDMI inputs.

- See figure 8 to identify the connector tip, ring, and sleeve when you are making connections for the switching transmitter from existing audio cables. A mono audio connector consists of the tip and sleeve. A stereo audio connector consists of the tip, ring, and sleeve.

Tip (+)
Ring (–)
Sleeve (↓)
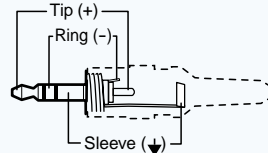
3.5 mm Stereo Plug Connector
(balanced)

Figure 8.   Wiring for TRS Connector

- The analog audio can be assigned to a specific input or set to be always output (see **Assign analog audio** SIS commands on page 22).

By default, audio input is selected automatically (see **Assign analog audio** SIS commands on page 22 to manually select audio inputs). When the HDMI input is selected with automatic audio input selection, the transmitter prioritizes embedded digital audio. The following table shows the audio format that is sent over the DTP connection when a specific audio format is not specified.

Selected Video Input	HDMI Embedded Audio Present	Analog Audio Present	Audio Sent Over TP
VGA	N/A	Yes	Analog audio
VGA	N/A	No	No audio
HDMI	Yes	No	HDMI embedded audio
HDMI	Yes	Yes	HDMI embedded audio
HDMI	No	Yes	Analog audio
HDMI	No	No	No audio

Connection and Wiring Details

HDMI Connector

Use the LockIt Lacing Bracket, supplied with the switcher, to securely fasten HDMI cable to device. The following instructions describe how to attach one HDMI LockIt Lacing Bracket. For more stability, attach a second HDMI LockIt Lacing Bracket to the other mounting screw.

1. Plug the HDMI cable into the panel connection (see figure 9).
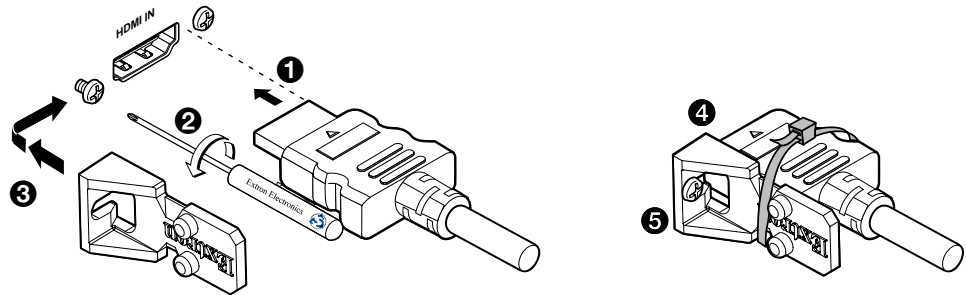
Figure 9.   Installing the LockIt Lacing Bracket

2. Loosen the HDMI connection mounting screw from the panel enough to allow the LockIt lacing bracket to be placed over it. The screw does not have to be removed.

3. Place the LockIt lacing bracket on the screw and against the HDMI connector, then tighten the screw to secure the bracket.
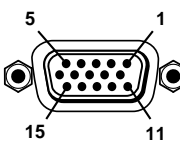
> **ATTENTION**:
> - Do not overtighten the HDMI connector mounting screw. The shield to which it fastens is very thin and can easily be stripped.
> - Ne serrez pas trop la vis de montage du connecteur HDMI. Le blindage auquel elle est attachée est très fin et peut facilement être dénudé.

4. Loosely place the included tie wrap around the HDMI connector and the LockIt lacing bracket as shown.

5. While holding the connector securely against the lacing bracket, use pliers or similar tools to tighten the tie wrap, then remove any excess length.

VGA Connector Wiring

The 15-pin HD (VGA) universal analog input port accepts RGB (RGBHV, RGBS, RGsB) and component video. Figure 10 shows the pinout for each format type on the connector.

Pin	RGBHV	RGBS	Component	Pin	RGBHV	RGBS	Component
1	Red	Red	R-Y	9	NC	NC	NC
2	Green	Green	Y	10	Ground	Ground	NC
3	Blue	Blue	B-Y	11	NC	NC	NC
4, 5	NC	NC	NC	12	NC	NC	NC
6	Red return	Red return	R-Y return	13	H sync	C sync	NC
7	Green return	Green return	Y return	14	V sync	NC	NC
8	Blue return	Blue return	B-Y return	15	NC	NC	NC

Figure 10.   VGA Connector

TP Cable Termination and Recommendations

Figure 11 details the **TIA/EIA T 568B** wiring standard. Use this standard to terminate the DTP cable with RJ-45 connectors.

Pin	TIA/EIA T 568 B Wire color
1	White-orange
2	Orange
3	White-green
4	Blue
5	White-blue
6	Green
7	White-brown
8	Brown
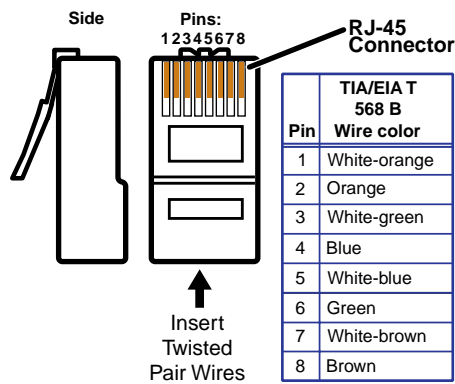
Figure 11.   TP Cable Termination

> **NOTE:**   Do **not** use Extron UTP23SF-4 Enhanced Skew-Free AV UTP cable or STP201 cable to link the switching transmitter and receiver. The DTP T EU and DTP T MK units do not work properly with these cables.

Supported cables

The DTP T EU and DTP T MK units are compatible with shielded twisted pair (STP) and unshielded twisted pair (U/UTP) cable. However, Extron strongly recommends that you use STP cable to achieve best performance.

> **ATTENTION:**
> - To ensure FCC Class A and CE compliance, STP cables and STP connectors are required.
> - Afin de s'assurer de la compatibilité entre FCC Classe A et CE, les câbles STP et les connecteurs STP sont nécessaires.

Cable recommendations

Extron recommends using the following practices to achieve full transmission distances up to 330 feet (100 meters) (DTP T EU 332 and DTP T MK 332) or 230 feet (70 meters) (DTP T EU 232 and DTP T MK 232) and reduce transmission errors.

• Use the following Extron XTP DTP 24 STP cables and DTP 24 connectors for the best performance:

  • **XTP DTP 24/1000**   Non-Plenum 1000' (305 meters) spool   22-236-03

  • **XTP DTP 24P/1000**   Plenum 1000' (305 meters) spool   22-235-03

  • **XTP DTP 24 Plug**   Package of 10   101-005-02

• If not using XTP DTP 24 cable, at a minimum, Extron recommends 24 AWG, solid conductor, STP cable with a minimum bandwidth of 400 MHz.

• Terminate cables with shielded connectors to the TIA/EIA-T568B standard.

• Use no more than two pass-through points, which may include patch points, punch down connectors, couplers, and power injectors. If these pass-through points are required, use CAT 6 or 6a shielded couplers and punch down connectors.

> **NOTE:**   When using STP cable in bundles or conduits, consider the following:
>
> • Do not exceed 40% fill capacity in conduits.
>
> • Do not comb the cable for the first 20 meters, where cables are straightened, aligned, and secured in tight bundles.
>
> • Loosely place cables and limit the use of tie wraps or hook-and-loop fasteners.
>
> • Separate twisted pair cables from AC power cables.

IR and RS-232 Connector Wiring

Figure 12 shows how to wire the Remote RS-232 and Over DTP RS-232 and IR connectors.
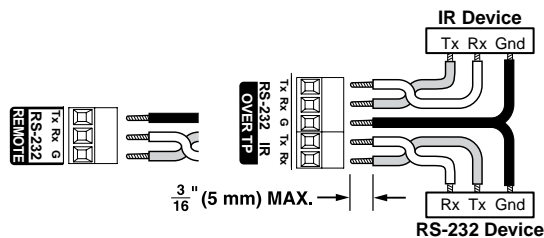
Figure 12.   IR and RS-232 Connectors Wiring

> **NOTES:**
>
> • The IR Tx and Rx line pair and the RS-232 Tx and Rx line pairs must each cross once between their connectors and the source or destination.
>
> • The length and preparation of exposed wires is important (see the second and third power connector **CAUTIONS** on the next page for details).

Power Supply Wiring

> **NOTE:** The power supply included with the switching transmitter can normally power the transmitter and the receiver.

Figure 13 shows how to wire the connector.
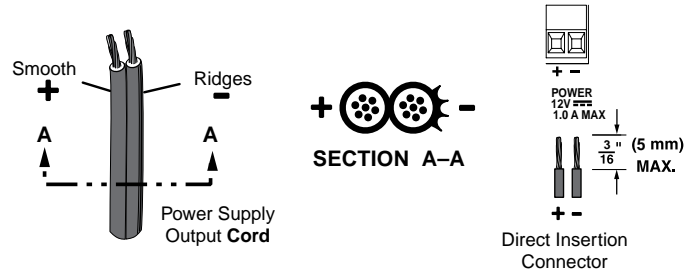
Figure 13.   Power Connector Wiring

> **CAUTION:**
>
> **ATTENTION :**
>
> - The wires must be kept separate while the power supply is plugged in. Remove power before wiring.
> - Les deux cordons d'alimentation doivent être tenus à l'écart l'un de l'autre quand l'alimentation est branchée.
>
> - The length of exposed wires is important. The ideal length is 3/16 inch (5 mm).
>   - Any longer and the exposed wires may touch, causing a short circuit between them.
>   - Any shorter and the wires can be easily pulled out even if tightly fastened by the captive screws.
> - La longueur des câbles exposés est importante. La longueur idéale est de 5 mm (3/16 inches).
>   - S'ils sont un peu plus longs, les câbles exposés pourraient se toucher et provoquer un court circuit.
>   - S'ils sont un peu plus courts, ils pourraient sortir, même s'ils sont attachés par les vis captives.
>
> - Do not tin the power supply leads before installing them in the connector. Tinned wires are not as secure in the connector and could be pulled out.
> - Ne pas étamer les conducteurs avant de les insérer dans le connecteur. Les câbles étamés ne sont pas aussi bien fixés dans le connecteur et pourraient être retirés.

ATTENTION:

- This product is intended to be supplied by a UL Listed power source marked "Class 2" or "LPS," rated 12 VDC, 1.0 A minimum. Always use a power supply supplied by or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the end product.

- Ce produit est destiné à une utilisation avec une source d'alimentation listée UL avec l'appellation « Classe 2 » ou « LPS » et normée 12 Vcc, 1,0 A minimum. Utilisez toujours une source d'alimentation fournie ou recommandée par Extron. L'utilisation d'une source d'alimentation non autorisée annule toute conformité réglementaire et peut endommager la source d'alimentation ainsi que le produit final.

- Unless otherwise stated, the AC/DC adapters are not suitable for use in air handling spaces or in wall cavities.

- Sauf mention contraire, les adaptateurs AC/DC ne sont pas appropriés pour une utilisation dans les espaces d'aération ou dans les cavités murales.

- The installation must always be in accordance with the applicable provisions of National Electrical Code ANSI/NFPA 70, article 725 and the Canadian Electrical Code part 1, section 16. The power supply shall not be permanently fixed to a building structure or similar structure.

- Cette installation doit toujours être en accord avec les mesures qui s'applique au National Electrical Code ANSI/NFPA 70, article 725, et au Canadian Electrical Code, partie 1, section 16. La source d'alimentation ne devra pas être fixée de façon permanente à une structure de bâtiment ou à une structure similaire.

- Power supply voltage polarity is critical. Incorrect voltage polarity can damage the power supply and the unit. The ridges on the side of the cord (see **figure 13** on the previous page) identify the power cord negative lead.

- La polarité de la source d'alimentation est primordiale. Une polarité incorrecte pourrait endommager la source d'alimentation et l'unité. Les stries sur le côté du cordon (voir **l'illustration 13** sur la page 15) permettent de repérer le pôle négatif du cordon d'alimentation.

To verify the polarity before connection, plug in the power supply with no load and check the output with a voltmeter.

Operation

The DTP T EU and DTP T MK units can be controlled only by SIS commands (see **Simple Instruction Set Control** on page 19) or the Product Configuration Software (see **Product Configuration Software** on page 26). This section contains basic information about operation details. Topics in this section include:

Indications

PWR HDCP HDMI VGA AUTO
○ ○ ○ ○ ○

- **Power LED** — Lights when power is applied.
- **HDCP LED** — Lights when the HDMI input signal is encrypted.
- **HDMI LED** — Lights when an HDMI input signal is detected.
- **VGA LED** — Lights when a VGA input signal is detected.
- **Auto LED** — Lights when the device is in auto switch mode.

Switch Modes

The switching transmitter has three switch modes:

- **Manual** — The input must be selected manually using an SIS command
- **Auto switch (VGA)** — The switcher automatically selects the input with an active signal present and, if both are present, prioritizes the VGA input. **This is the factory default mode**.
- **Auto switch (HDMI)** — The switcher automatically selects the input with an active signal present and, if both are present, prioritizes the HDMI input.

These modes can be selected through SIS commands (see **Switch mode** SIS commands on page 22) or the Product Configuration Software (see the PCS Help file).

EDID

To manage EDID on the DTP T EU and DTP T MK units, use SIS commands (see **EDID** SIS commands on page 23) or the Product Configuration Software (see the PCS Help file). The DTP T EU and DTP T MK units can record and save EDID in a user memory location, select a pre-defined EDID, or use EDID from a display connected to a receiver. EDID stored in the user memory location can come from the display connected to a receiver or a custom EDID imported through the Product Software.

Reset

Use the recessed Reset button on the side of the transmitter (see **figure 3** on page 7 and **item G** on page 8) to initiate a reset to the default settings. Press and **hold** the reset button for approximately 6 seconds. All front panel LEDs cycle. Release the button. This reset is the equivalent of issuing the **Reset** SIS command (Esc ZXXX ←, see page 25).

Troubleshooting — If no Image Appears

1. Ensure that all devices are plugged in and powered on. The switcher is receiving power if its power LED is lit.

2. Ensure an active input is selected on the switcher or that the switcher is in auto-input switching mode. The switcher is receiving an active input if either the HDMI or VGA LED is lit.

3. Ensure that the proper signal format is supplied.

4. Check the cabling and make corrections as necessary.

5. Call the Extron S3 Sales & Technical Support Hotline if necessary. See the **end** of this guide for the phone number in your region of the world.

Remote Control

This section includes:

- **Simple Instruction Set Control**
- **Product Configuration Software**

The DTP T EU and DTP T MK switchers can be remotely controlled via their Remote RS-232 ports and their Configuration (USB) ports. The remote host device (such as a computer or control system) sends Extron Simple Instruction Set commands.

Simple Instruction Set Control

The switching transmitter can be remotely controlled using SIS commands from a host device such as a computer or control system via its Configuration (USB) port (see **item ⑧** on page 7) or Remote RS-232 port (see **item ⑧** on page 8).

The default serial port protocol of the Remote RS-232 serial port is as follows:

- 9600 baud
- No parity
- 8-bit
- No flow control
- 1 stop bit

Host-to-Switcher Communications

SIS commands consist of one or more characters per field. No special characters are required to begin or end a command character sequence. When a command is valid, the switcher executes the command and sends a response to the host device. All responses from the switcher to the host end with a carriage return and a line feed (CR/LF = ◄┘), which signals the end of the response character string. A string is one or more characters.

Switcher-Initiated Messages

When a local event occurs, such as a front panel operation, loss or restoration of an input signal, or an error condition, the switcher responds by sending a message to the host. The switcher-initiated messages are listed below:

© Copyright 20*yy*, Extron Electronics DTP T EU (MK) 332 (232), V*x.xx*, 60-*nnnn-nn*◄┘

The switcher issues the copyright message when it first powers on. V*x.xx* is the firmware version number and 60-*nnnn-nn* is the part number.

HdbtO1*n*◄┘

The switcher sends the Hdbt message whenever the side panel TP function switch is changed. *n* is the switch position; 0 = HDBT, 1 = DTP.

Error responses

When the switcher receives a valid SIS command, it executes the command and sends a response to the host device. If the switcher is unable to execute the command because the command is invalid or it contains invalid parameters, the switcher returns an error response to the host. The error response codes are:

EØ1 — Invalid input channel number (out of range)
EØ6 — Invalid channel change
E1Ø — Invalid command
E13 — Invalid parameter

Timeout

Pauses of 10 seconds or longer between command ASCII characters result in a timeout. The command operation is aborted with no other indication.

Using the Command and Response Table

The **command and response table** begins page 22. Symbols are used throughout the table to represent variables in the command and response fields. Command and response examples are shown throughout the table. The ASCII to HEX conversion table below is for use with the command and response table.

ASCII to Hex Conversion Table								Esc	1B	CR	ØD	LF	ØA
Space →	20	!	21	"	22	#	23	$	24	%	25	&	26	'	27
(| 28 |)	29	*	2A	+	2B	,	2C	-	2D	.	2E	/	2F
Ø	30	1	31	2	32	3	33	4	34	5	35	6	36	7	37
8	38	9	39	:	3A	;	3B	<	3C	=	3D	>	3E	?	3F
@	4Ø	A	41	B	42	C	43	D	44	E	45	F	46	G	47
H	48	I	49	J	4A	K	4B	L	4C	M	4D	N	4E	O	4F
P	5Ø	Q	51	R	52	S	53	T	54	U	55	V	56	W	57
X	58	Y	59	Z	5A	[	5B	\	5C	]	5D	^	5E	_	5F
`	6Ø	a	61	b	62	c	63	d	64	e	65	f	66	g	67
h	68	i	69	j	6A	k	6B	l	6C	m	6D	n	6E	o	6F
p	7Ø	q	71	r	72	s	73	t	74	u	75	v	76	w	77
x	78	y	79	z	7A	{	7B	l	7C	l	7C	}	7D	~	7E	DEL	7F

Symbol definitions

↵   = Carriage return/line feed

←   = Carriage return (no line feed)

| = Pipe (can be used interchangeably with the ← character)

•   = space

`Esc`   = Escape key

W   = Can be used interchangeably with the `Esc` character

`X1`   = Input number (for switching)   Ø = No input   1 = HDMI input   2 = VGA input

`X2`   = Switch mode   Ø = Manual   1 = Auto switch VGA (**default**)   2 = Auto switch HDMI

`X3`   = Input number (for audio configuration)   Ø = Always output   1 = HDMI input   2 = VGA input

`X4`   = Status   Ø = Off, disabled, not detected 1 = on, enable, or detected

`X5`   = Input HDCP status   Ø = No source is detected
1 = Source is detected with HDCP
2 = Source detected without HDCP

`X6`   = Output HDCP status   Ø = No sink is detected
1 = Sink is detected with HDCP
2 = Sink is detected without HDCP

`X7`   = Color bit depth mode   Ø = Auto   1 = 8-bit

`X8`   = EDID   See the **table** on page 23.

`X9`   = User EDID location   **66** or **67**

`X10`   = Raw EDID data   128 or 256 bytes of hexadecimal data

`X11`   = Resolution and rate in plain text   Example: `192Øx12ØØ•@6ØHz`

`X12`   = Switch position   Ø = DTP   1 = HDBT

`X13`   = Pixel phase   ØØ – 63 (32 = **default**)

`X14`   = Total pixels   Depends on input rate

`X15`   = Horizontal and vertical start   ØØØ – 255 (128 = **default**)

`X16`   = Switcher name   A text string of up to 24 alphanumeric characters and minus sign/hyphen (-).
No blank or space characters are permitted as part of a name.
The first letter must be a letter, and the last character must not be a minus sign/hyphen.

`X17`   = Firmware version number to second decimal place *(x.xx)*

`X18`   = Verbose mode   Ø = clear/none
1 = verbose mode (default for RS-232 or USB) (**default**)
2 = tagged responses for queries
3 = verbose mode and tagged for queries

Command and Response Table for SIS Commands

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional description
Select and view input			
NOTE: The switcher must be in manual switch mode to execute this command. If it is in either auto switch mode, it returns EØ6.			
Select an input	X1!	InX1•All↵	Select X1 to transmit to the connected receiver.
Example:	1!	InØ1•All↵	Select VGA input.
View input selection	!	X1↵	X1 is selected.
Switch mode			
Set manual switch mode	Esc ØAUSW←	AuswØ↵	Set switch mode to normal.
Set auto switch mode VGA	Esc 1AUSW←	Ausw1↵	Set switch mode to auto (VGA). The switcher automatically selects the VGA input if both inputs are present. **Default**.
Set auto switch mode HDMI	Esc 2AUSW←	Ausw2↵	Set switch mode to auto (HDMI). The switcher automatically selects the HDMI input if both inputs are present.
View switch mode	Esc AUSW←	X2↵	
Assign analog audio input to specific video input or always output audio			
Always output analog audio	Esc ØAFLW←	AflwØ↵	Analog audio is output regardless of input selection (**default**).
Assign (lock) analog audio to a specific input	Esc X3AFLW←	AflwX3↵	Assign analog audio to X3.
View audio assignment	Esc AFLW←	X3↵	
Input signal status			
Request status of all inputs and the output	Esc ØLS←	SigX4^HDMI•X4^VGA＊X4^o↵	X4^HDMI and X4^VGA are the input signal status. X4^o is the output signal status.
HDCP Status			
View the HDCP status of the HDMI input	Esc I1HDCP←	HdcpIX5↵	
View the output HDCP status	Esc OHDCP←	HdcpOX6↵	
Output color bit depth mode			
Set bit depth mode to auto	Esc VØBITD←	BitdVØ↵	Auto mode is based on sink EDID (**default**).
Force bit depth mode to 8-bit	Esc V1BITD←	BitdV1↵	
Show bit depth mode	Esc VBITD←	X7↵	
HDCP Authorized Device			
Set HDMI input to HDCP authorized	Esc E1HDCP←	HdcpE1↵	**Default**.
Set HDMI input to HDCP not authorized	Esc EØHDCP←	HdcpEØ↵	
View HDCP authorized status	Esc EHDCP←	X4•Ø↵	

NOTE:
X1 = Input number	Ø = No input	1 = HDMI input	2 = VGA input
X2 = Switch mode	Ø = Manual	1 = Auto switch VGA (**default**)	2 = Auto switch HDMI
X3 = Input number	Ø = Always output	1 = HDMI input	2 = VGA input
X4 = Status	Ø = Not detected, authorized	1 = Detected, authorized	
X5 = Input HDCP status	Ø = No source detected	1 = Source detected with HDCP	2 = Source detected without HDCP
X6 = Output HDCP status	Ø = No sink detected	1 = Sink detected with HDCP	2 = Sink detected without HDCP
X3 = Input number	Ø = Always output	1 = HDMI input	2 = VGA input
X7 = Color bit depth mode	Ø = Auto	1 = 8-bit	

Command and Response Table for SIS Commands (continued)

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional description
EDID Minder			
NOTE: See the table, below, for the EDID values.			
Assign EDID to an input	`Esc`A`X1`*`X8`EDID←	Edid A`X1`*`X8`↵	**Defaults**: Ø3 and 5Ø.
Save the EDID of the connected display to a user location	`Esc`S`X9`EDID←	Edid S`X9`↵	Save EDID of display connected to the output to the user store slot **66** or **67**.
View the EDID assignment	`Esc`A`X1`EDID←	`X8`↵	
View raw EDID data	`Esc`R`X1`EDID←	`X10`↵	Read data as text from the EDID assigned and used on input `X1`.
View EDID native resolution	`Esc`N`X1`EDID←	`X11`↵	Read out native resolution and refresh rate from the EDID assigned to the specified input in plain text. Example: `192Øx12ØØ @6Ø.ØØHz`

`X8`	Value	`X8`	Value	`X8`	Value	`X8`	Value
VGA – PC values							
Ø1	800x600 @ 60 Hz	Ø5	1280x800 @ 60 Hz	Ø9	1400x1050 @ 60 Hz	13	1680x1050 @ 60 Hz
Ø2	1024x768 @ 60 Hz	Ø6	1280x1024 @ 60 Hz	1Ø	1440x900 @ 60 Hz	14	1920x1080 @ 60 Hz
Ø3*	**1280x720 @ 60 Hz**	Ø7	1360x768 @ 60 Hz	11	1600x900 @ 60 Hz	15	1920x1200 @ 60 Hz
Ø4	1280x768 @ 60 Hz	Ø8	1366x768 @ 60 Hz	12	1600x1200 @ 60 Hz	16	2048x1080 @ 60 Hz
DVI – PC values							
17	800x600 @ 60 Hz	21	1280x800 @ 60 Hz	25	1400x1050 @ 60 Hz	29	1680x1050 @ 60 Hz
18	1024x768 @ 60 Hz	22	1280x1024 @ 60 Hz	26	1440x900 @ 60 Hz	3Ø	1920x1080 @ 60 Hz
19	1280x720 @ 60 Hz	23	1360x768 @ 60 Hz	27	1600x900 @ 60 Hz	31	1920x1200 @ 60 Hz
2Ø	1280x768 @ 60 Hz	24	1366x768 @ 60 Hz	28	1600x1200 @ 60 Hz	32	2048x1080 @ 60 Hz
HDMI – PC values, with 2-channel audio							
33	800x600 @ 60 Hz	37	1280x1024 @ 60 Hz	41	1440x900 @ 60 Hz	45	1920x1200 @ 60 Hz
34	1024x768 @ 60 Hz	38	1360x768 @ 60 Hz	42	1600x900 @ 60 Hz	46	2048x1080 @ 60 Hz
35	1280x768 @ 60 Hz	39	1366x768 @ 60 Hz	43	1600x1200 @ 60 Hz		
36	1280x800 @ 60 Hz	4Ø	1400x1050 @ 60 Hz	44	1680x1050 @ 60 Hz		
HDMI – HDTV values, with 2-channel audio							
47	480p @ 60 Hz	5Ø†	**720p @ 60 Hz**	53	1080p @ 50/25 Hz	56	1080p @ 60 Hz
48	576p @ 50 Hz	51	1080i @ 50 Hz	54	1080p @ 50 Hz		
49	720p @ 50 Hz	52	1080i @ 60 Hz	55	1080p @ 60/24 Hz		
HDMI – HDTV values, with multi-channel audio							
57	720p @ 50 Hz	59	1080i @ 50 Hz	61	1080p @ 50/25 Hz	63	1080p @ 60/24 Hz
58	720p @ 60 Hz	6Ø	1080i @ 60 Hz	62	1080p @ 50 Hz	64	1080p @ 60 Hz
Output and user locations							
`X8`	**Source**	`X8`	**Source**	`X8`	**Source**		
65	Output	66	User location 1	67	User location 2		

* Default for VGA input.

† Default for HDMI input.

NOTE: `X1` = Input number   Ø = No input   1 = HDMI input   2 = VGA input
`X8` = EDID   See the table above.
`X9` = User EDID location   **66** or **67**
`X10` = Raw EDID data   128 or 256 bytes of hexadecimal data
`X11` = Resolution and rate in plain text   Example: `192Øx12ØØ•@6ØHz`

Command and Response Table for SIS Commands (continued)

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional description
Video mute			
Mute video	1B	Vmt1⏎	Output no video signal.
Unmute video	ØB	VmtØ⏎	Output the selected video input.
Read video mute	B	X4⏎	Mute status = X4.
Analog audio mute			
Mute analog audio	1Z	Amt1⏎	Output no analog audio signal.
Unmute analog audio	ØZ	AmtØ⏎	Output analog audio input.
Read analog audio mute	Z	X4⏎	Analog audio mute status = X4.
Disable (Mute) HDMI Output Embedded Audio			
Enable HDMI audio output	Esc 1AFMT←	Afmt1⏎	Enable HDMI audio. (**Default**)
Disable HDMI audio output	Esc ØAFMT←	AfmtØ⏎	Disable HDMI audio.
View HDMI audio configuration	Esc AFMT←	X4⏎	
Pixel phase (RGB input only)			
Set pixel phase	Esc 2*X13 PHAS←	Phas2*X13⏎	
Increment pixel phase	Esc 2+PHAS←	Phas2*X13⏎	
Decrement pixel phase	Esc 2−PHAS←	Phas2*X13⏎	
View pixel phase value	Esc 2PHAS←	X13⏎	
Total pixels			
Set total pixels value	Esc 2*X14 TPIX←	Tpix2*X14⏎	
Increment total pixels	Esc 2+TPIX←	Tpix2*X14⏎	
Decrement total pixels	Esc 2−TPIX←	Tpix2*X14⏎	
View total pixels	Esc 2TPIX←	X14⏎	

NOTE: X4 = Status   Ø = Not detected, authorized   1 = Detected, authorized
        X13 = Pixel phase   ØØ – 63 (32 = **default**)
        X14 = Total pixels   Depends on input rate

Command and Response Table for SIS Commands (continued)

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional description
Horizontal start			
Set horizontal start value	[Esc]2*[X15]HSRT←	Hsrt2*[X15]↵	
Increment horizontal start	[Esc]2+HSRT←	Hsrt2*[X15]↵	
Decrement horizontal start	[Esc]2−HSRT←	Hsrt2*[X15]↵	
View horizontal start	[Esc]2HSRT←	[X15]↵	
Vertical start			
Set vertical start value	[Esc]2*[X15]VSRT←	Vsrt2*[X15]↵	
Increment vertical start	[Esc]2+VSRT←	Vsrt2*[X15]↵	
Decrement vertical start	[Esc]2−VSRT←	Vsrt2*[X15]↵	
View vertical start	[Esc]2VSRT←	[X15]↵	
TP function switch position			
View switch position	[Esc]01HDBT←	Hdbt01*[X12]↵	

> **NOTE:** The "Hdbt01*" portion of response is returned in Verbose mode 2 and 3 only.

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional description
Device Name			
Set the unit name	[Esc][X16]CN←	Ipn•[X16]↵	Change the name to one of your choosing.
Set unit name to factory default	[Esc]•CN←	Ipn•DTP-T-EU(MK)-332(232)↵	
View unit name	[Esc]CN←	[X16]↵	
Reset			
Reset to factory setting	[Esc]ZXXX←	Zpx↵	Reset to factory defaults.
Information requests			
Information request	I	In[X1]•Aflw[X1]•Ausw[X2]•Vmt[X4]•Amt[X4]↵	
Example:	I	In1•Aflw2•Ausw1•Vmt1•Amt0↵	
			Input 1 is selected, analog audio is assigned to input 2, the switcher is in auto-input switching (high) mode, video is muted and analog audio is unmuted.
Request part number	N	60-_nnnn-nn_↵	See **www.extron.com**, for part numbers.
Query controller firmware version	Q	[X17]↵	
Example:	Q	1.23↵	The factory-installed controller firmware version is 1.23 (sample value only).
Verbose mode			

> **NOTE:** If tagged responses are enabled (modes 2 and 3), all "view" commands return the prefix and the value, just as the "set" commands do. For example, the View front panel switch mode ([Esc]AUSW←) command returns "Ausw[X2]↵".

Command Function	SIS Command (Host to Unit)	Response (Unit to Host)	Additional description
Set verbose mode	[Esc][X18]CV←	Vrb[X18]↵	
Read verbose mode	[Esc]CV←	[X18]↵	

NOTE:
[X1] = Input number   0 = No input   1 = HDMI input   2 = VGA input
[X2] = Switch mode   0 = Manual   1 = Auto switch VGA (**default**)   2 = Auto switch HDMI
[X4] = Status   0 = Not enabled   1 = Enabled
[X12] = Switch position   0 = DTP   1 = HDBT
[X15] = Horizontal and vertical start   000 – 255 (128 = **default**)
[X16] = Switcher name   A text string of up to 24 alphanumeric characters and minus sign/hyphen (-).
No blank or space characters are permitted as part of a name.
The first letter must be a letter, and the last character must not be a minus sign/hyphen.
[X17] = Firmware version number to second decimal place (_x.xx_)
[X18] = Verbose mode   0 = clear/none   2 = tagged responses for queries
   1 = verbose mode (**default**)   3 = verbose mode and tagged for queries

Product Configuration Software

This section details the Product Configuration Software (PCS), available on the Extron website. The Windows-based PCS communicates with the switcher via the following ports:

- **Configuration port** — A standard USB mini-B port (see **item B** on page 7).
- **Remote RS-232 port** — A serial port on a 3.5 mm, 3-pole captive screw connector (see **item E** on page 8).
 - 9600 Baud
  - No parity
  - 8 data bits
  - 1 stop bit

The program is compatible with Windows 2000, Windows XP, and later.

Installing the Software

The PCS, version 2.3 or newer, and Firmware Loader are available on the Extron website. Download and install both programs as follows:

> **NOTE:** Steps 1 through 6, below, are also used to download a firmware update package.

1. Visit the website **www.extron.com** and click the `Download` tab (see figure 15).
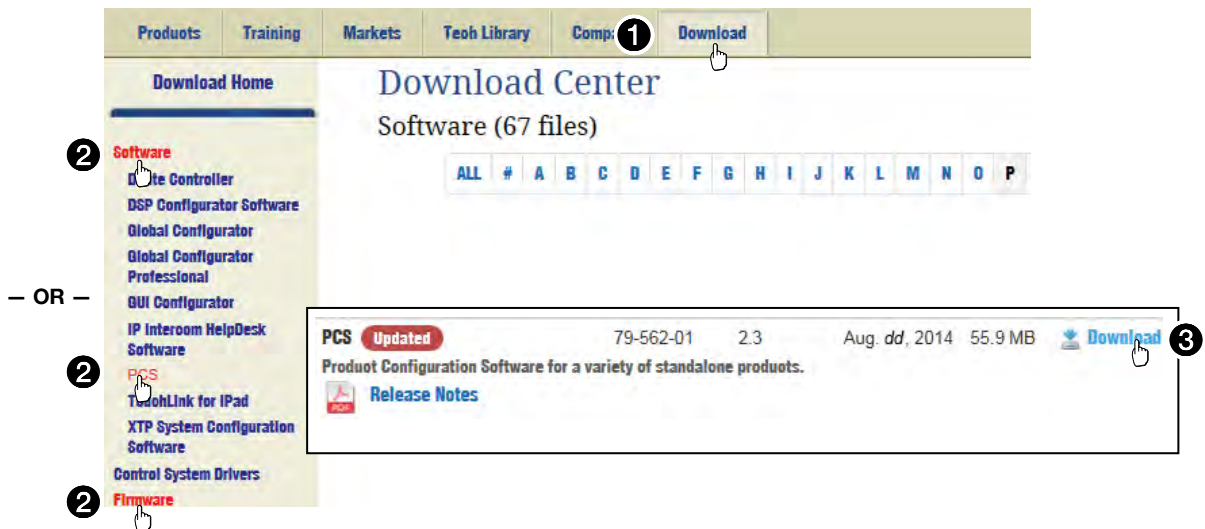
Figure 15. Downloading a Software or Firmware Package (PCS Shown)
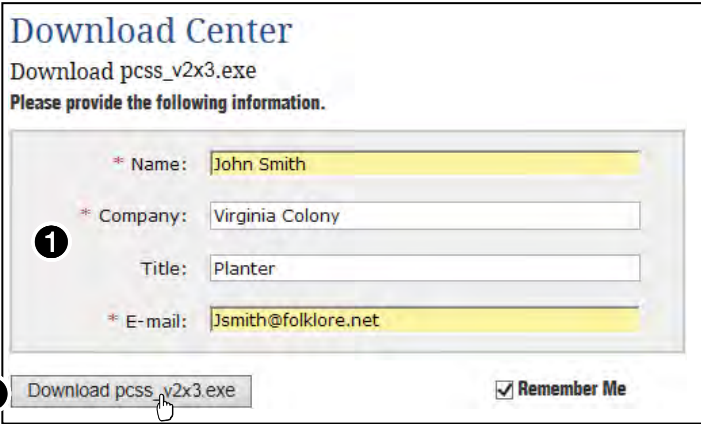
2. Click the `Software`, `Firmware`, or specific firmware package link as appropriate to the operation you are performing.

3. Click **Download** for the desired software or firmware to download and (see figure 15).

> **TIP:** Jump to the nearest page of downloads by clicking the desired filtering letter.

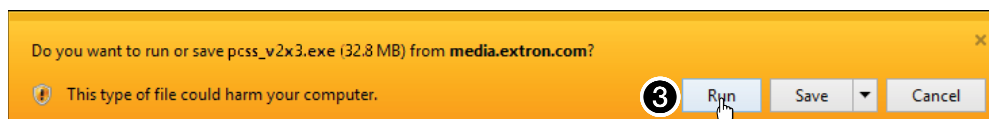The Download Center dialog box appears (see figure 16).

Figure 16. Download Center Dialog Box

4. Enter the requested personal information (see figure 16, ❶).

> **TIP:** Click **Remember Me** to eliminate step 4 in future downloads.

5. Click **Download** to copy the software or firmware to the computer (❷). The download warns you about downloads and asks you to confirm it (see figure 17).

Figure 17. Download Warning and Confirmation

> **NOTE:** Figure 17 may appear different or may not appear at all, depending on your web browser choice and its security settings.

6. Cick **Run** to confirm that you want to run the installation (❸).

7. For a firmware download, exit this procedure and return to **Updating the Firmware** on page 30.

8. Follow the on-screen instructions. The installation creates the necessary subfolders of `C:\Program Files` and the necessary groups. It places the appropriate icons into the correct group folders:

> **NOTE:** `C:\Program Files(x86)\ ...` for 64-bit Windows OS.

Product Configuration Software —
- **Folder** — `C:\Program Files\Extron\ Extron PCS`
- **Group folder** —`Extron Electronics\Extron Product Configuration Software`
  - `Check for Extron PCS Updates`
  - `Extron PCS Help`
  - `Extron Product Configuration Software`
  - `Uninstall Extron Product Configuration Software`

Firmware Loader —
- **Folder** — `C:\Program Files\Extron\FWLoader`
- **Group folder** —`Extron Electronics\Firmware Loader`
  - `Check for Firmware Loader Updates`
  - `Firmware Loader Help`
  - `Firmware Loader`
  - `Uninstall Firmware Loader`

Starting the Program

Start the Extron Product Configuration Software as follows:

1. Click **Start > Programs > Extron Electronics > Extron Product Configuration Software > Extron Product Configuration Software**.

   The Product Configuration Software opens to the Device Discovery screen (see figure 18).
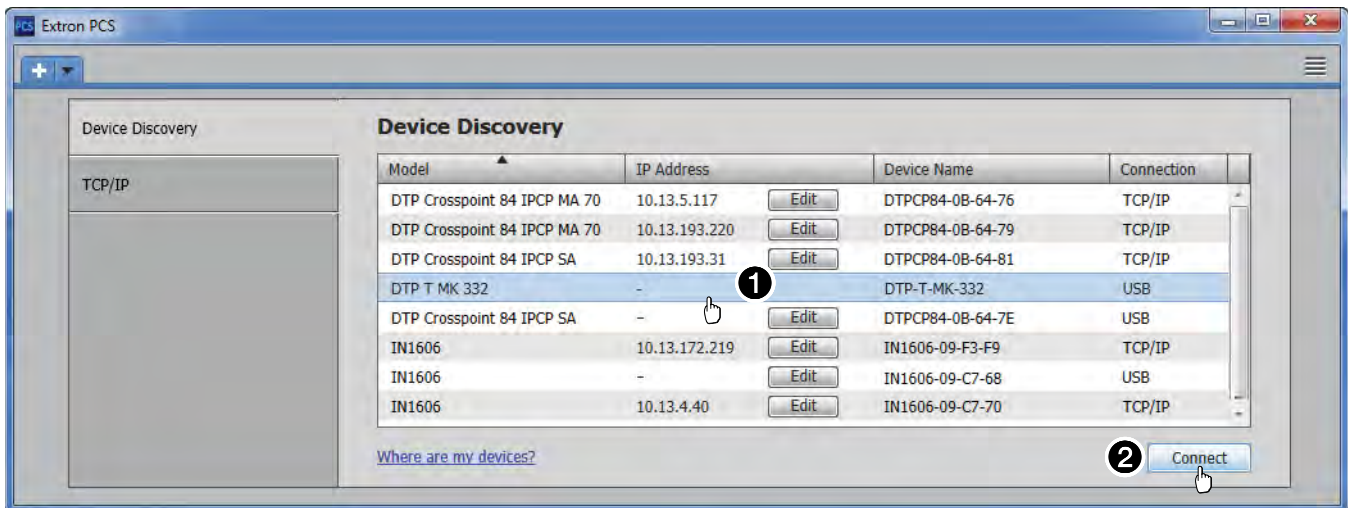
Figure 18.   Device Discovery Screen

2. Select (click) your DTP T EU or DTP T MK unit (see figure 18, ❶) and click **Connect** (❷). The Product Configuration Software opens to the Input/Output Configuration page (see **figure 19** on the next page).

   Operate the Product Configuration Software as described in the PCS Help (click ▤ > **Extron PCS Help**).
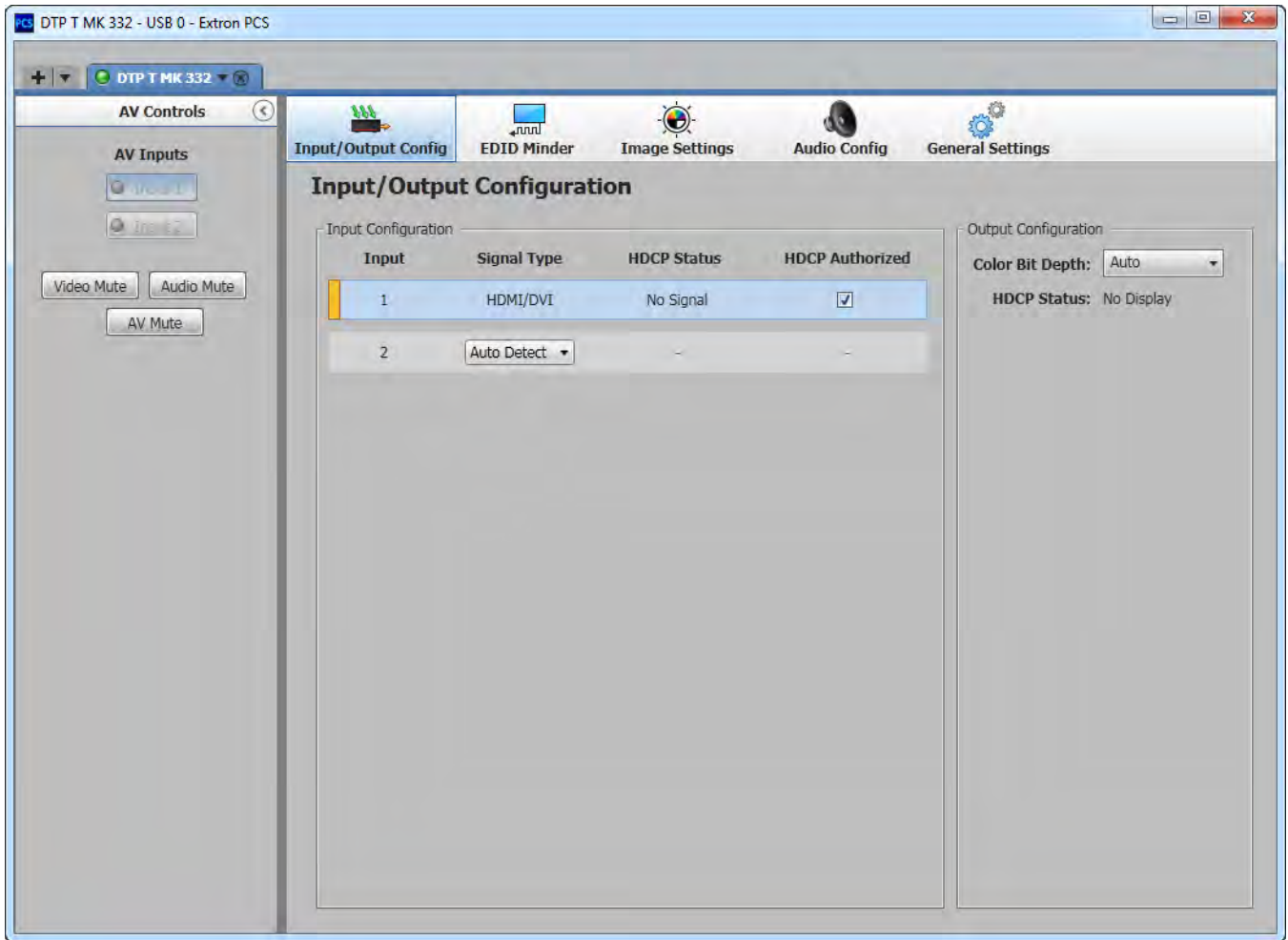
Figure 19.   **Product Configuration Software**

Updating the Firmware

The Product Configuration Software can call the Firmware Loader utility, which provides a way to replace the firmware that is coded on the control board of the switcher without taking the unit out of service.

> **NOTE:** Upgrading the firmware does not overwrite the current configuration.

Update the unit firmware as follows:

1. Perform steps 1 through 6 of **Installing the Software**, on page 26, to download the firmware upgrade from the Extron website, **www.extron.com**.

2. Click **Run** in the File Download dialog box (see **figure 20** on the next page, ❶) and Security Warning dialog box (❷). The PC downloads the firmware update from the Extron website and starts the Extron Installation Program to extract the firmware file.

3. Click **Next** (❸). The program extracts the firmware files and places them in a folder identified in the InstallShield Wizard window.

> **ATTENTION:**
> - The extension of the firmware file must be .s19. Opening a file with an incorrect extension may cause the device to stop functioning.
> - L'extension du fichier firmware doit être .s19. Si un fichier est ouvert avec une mauvaise extension, l'appareil peut arrêter de fonctionner.

> **NOTES:**
> - **Note the folder to which the firmware file is saved**. When downloaded from the Extron website, the firmware is placed in a subfolder of:
>   - **64-bit Windows OS**: `C:\Program Files (x86)\Extron\Firmware`.
>   - **32-bit Windows OS**: `C:\Program Files\Extron\Firmware`.
> - The original factory-installed firmware is permanently available on the unit. If the attempted firmware upload fails, the unit reverts to the factory-installed firmware.

4. Click **Finish** to exit the program (❹).
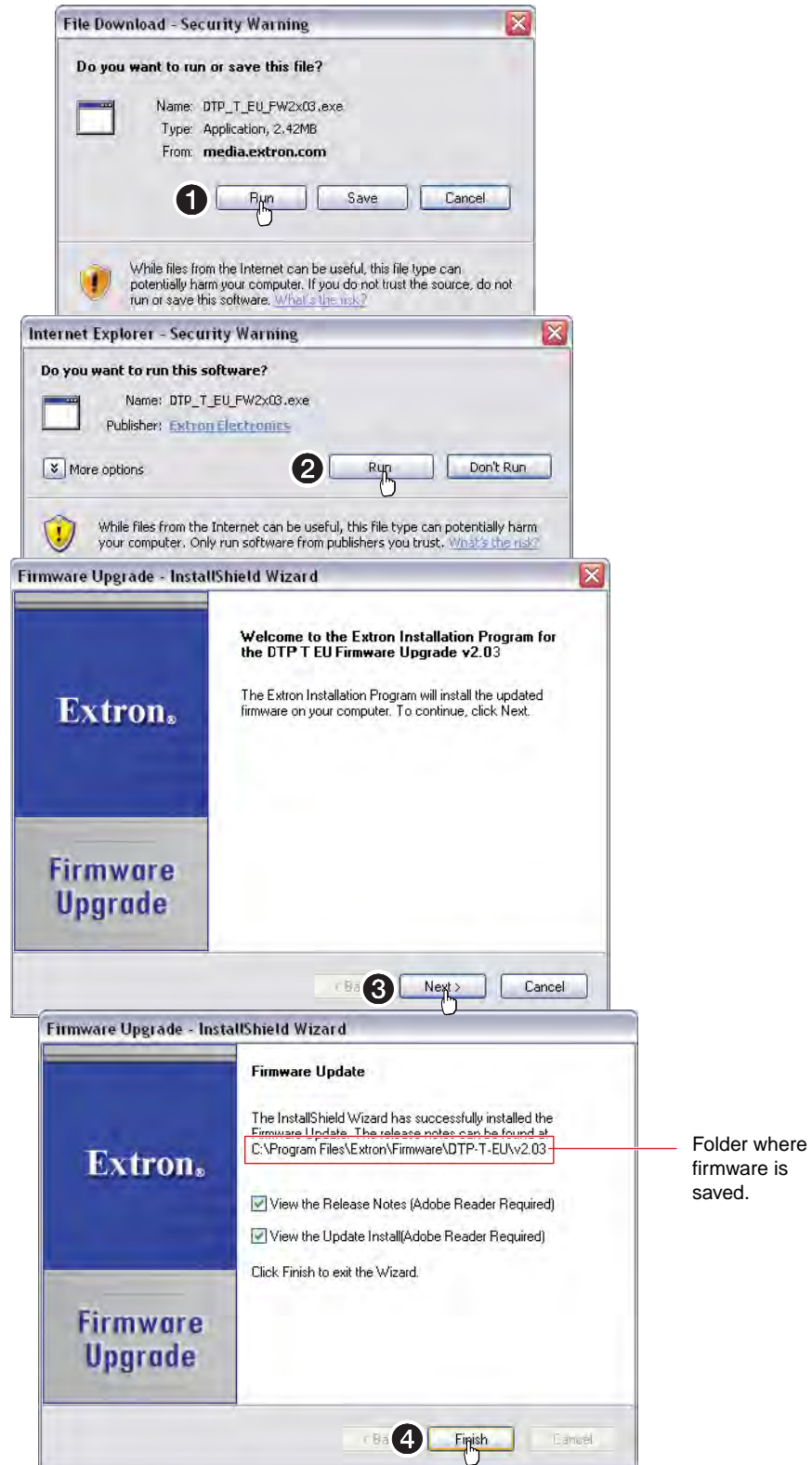
Figure 20. **Extracting Firmware Upgrade Files**

5. Connect the computer to the Configuration port (see **item** **B** on page 7) or Remote RS-232 port (see **item** **E** on page 8) of the switcher.

6. Start the Product Configuration Software and connect to the unit (see **Starting the Program**, steps 1, 2, 3, and 5, starting on page 28.

7. Click **Tools** > **Update firmware**. The software asks you to confirm that you want to continue the update (see figure 21).
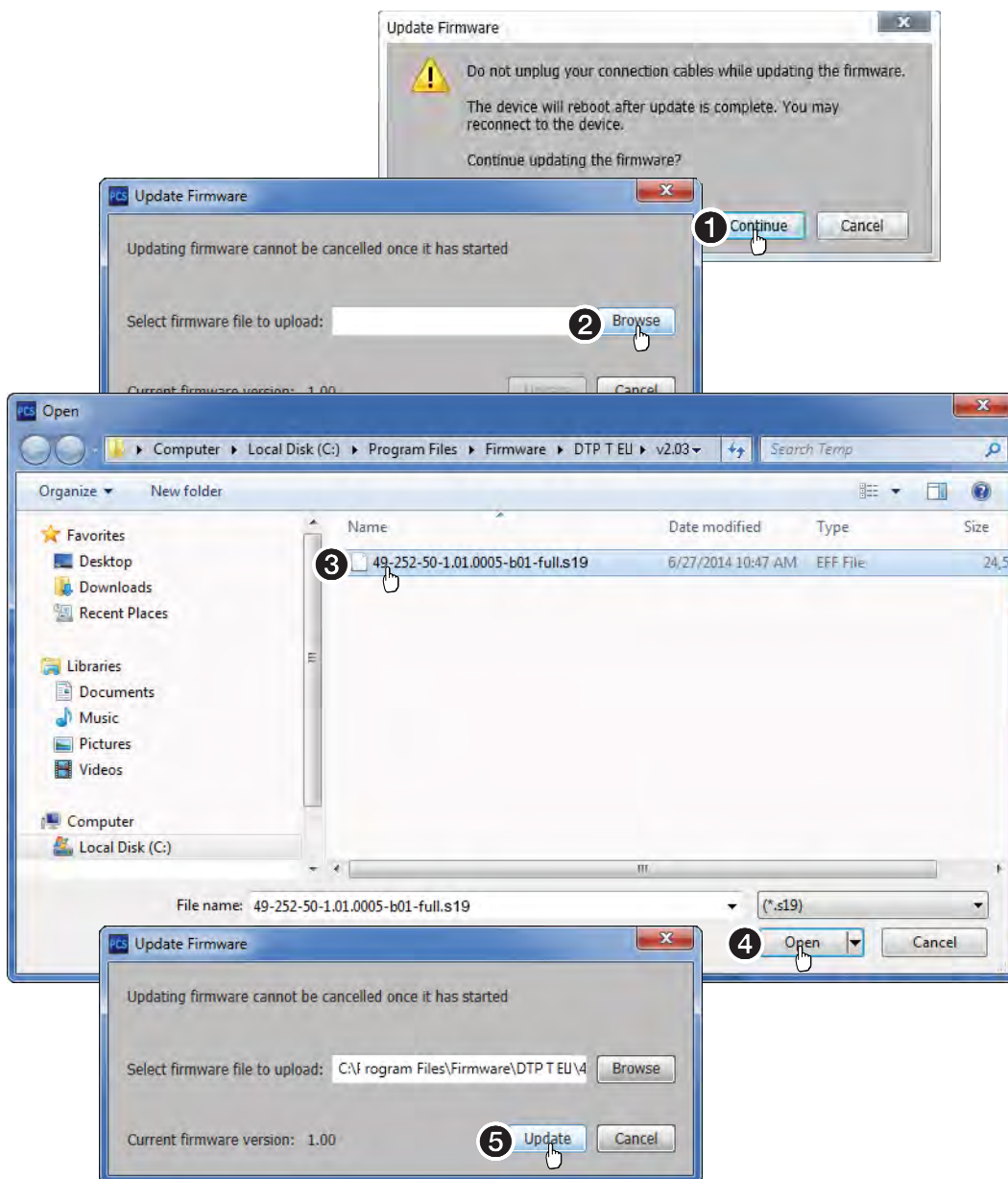

Figure 21.   Updating Firmware

8. Click **Continue** (see figure 21, ❶). The Product Configuration Software disconnects itself from the unit and calls the Firmware Loader utility in the background. The Update Firmware dialog box appears.

9. Click **Browse** (❷). The Open dialog box opens.

10. Navigate to the folder where you saved the firmware upgrade file (see figure 21, above). Select the file (❸) and click **Open** (❹). The Update Firmware dialog box returns to the top.

11. Click **Update** to continue see **figure 21** on the previous page, ❺).

The Firmware Loader utility tests the connection, installs the update, and then verifies the firmware.
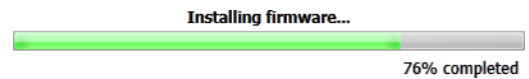
At the conclusion of the process, the utility reports Upload Complete.

12. Click **Close**. The Product Configuration Software window returns to the front.

13. Click the ⊗ in the connection tab to completely disconnect the program from the unit and then reconnect the program as described in **Starting the Program**, beginning at step 3 on page 28.

Extron Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America,
and Central America:
Extron Electronics
1230 South Lewis Street
Anaheim, CA 92805
U.S.A.

Japan:
Extron Electronics, Japan
Kyodo Building, 16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

Europe and Africa:
Extron Europe
Hanzeboulevard 10
3825 PH Amersfoort
The Netherlands

China:
Extron China
686 Ronghua Road
Songjiang District
Shanghai 201611
China

Asia:
Extron Asia Pte Ltd
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363
Singapore

Middle East:
Extron Middle East
Dubai Airport Free Zone
F12, PO Box 293666
United Arab Emirates, Dubai

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions, or if modifications were made to the product that were not authorized by Extron.

> **NOTE:** If a product is defective, please call Extron and ask for an Application Engineer to receive an RA (Return Authorization) number. This will begin the repair process.
>
> **USA**: 714.491.1500 or 800.633.9876   **Europe**: 31.33.453.4040
> **Asia**: 65.6383.4400   **Japan**: 81.3.3511.7655

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.